WHAT IS CLAIMED IS:

1. A fusion protein comprising, a first polypeptide portion having an amino acid sequence from a syndecan protein and including a heparan sulphate attachment sequence comprising amino acids 20-41 of SEQ ID NO: 9, or amino acids 20-41 of SEQ ID NO: 9 with conservative amino acid substitutions, the heparan sulphate attachment sequence having a heparan sulfate glycosaminoglycan chain attached thereto, and a second polypeptide portion having an amino acid sequence from a protein which does not naturally have a covalently linked heparan sulphate glycosaminoglycan chain, and wherein the heparan sulphate glycosaminoglycan chain attached to the first polypeptide portion modifies the function of the second polypeptide portion.

2. The fusion protein of claim 1, further comprising a first polypeptide portion having an amino acid sequence that is at least 50% identical to amino acids amino acids 20-41 of SEQ ID NO: 9.

3. The fusion protein of claim 1, further comprising at least one chondroitin sulfate glycosaminoglycan.

4. The fusion protein of claim 1, wherein the second polypeptide is a growth factor selected from the group consisting of heparan-binding growth factor (HBGF), acidic FGF (aFGF), basic fibroblast growth factor (bFGF), kepatinocyte growth factor (KGF), granulocyte-macrophage colony stimulating factor (GMCSF), Int-2, *hst*/k-fgf, and FGF-5, FGF-6, hepatocyte growth factor (HGF), heparan-binding EGF-like growth factor (HB-EGF), platelet-derived growth factor (PDGF), transforming growth factor-β (TGF-β), vascular endothelial growth factor (VEGF), vascular permeability factor (VPF), hepatocyte growth factor, interferon γ, interleukin-3, and Schwannoma-derived growth factor (SDGF).

5. The fusion protein of claim 4, wherein the second polypeptide is basic fibroblast growth factor (bFGF).

6. The fusion protein of claim 1, wherein the second polypeptide is growth factor receptor.

7. The fusion protein of claim 1, wherein the second polypeptide is an extracellular matrix molecule selected from the group consisting of collagen type I, collagen type II, collagen type III, collagen type V, laminin, vitronectin, tenascin, thrombospondin, pleitropin, entactin, SPARC, wnt-1 and fibronectin.

8. The fusion protein of claim 1, wherein the second polypeptide is a protease inhibitor selected from the group consisting of thrombin, antithrombin III, heparan cofactor II, leuserpin, plasminogen activator inhibitor, tissue plasminogen activator, lipoprotein-associated coagulation inhibitor, protein nexin I, factor X_a, lipoprotein assocaited coagulation inhibitor (LACI).

9. The fusion protein of claim 8, wherein the second polypeptide is antithrombin III.

10. The fusion protein of claim 1, wherein the second polypeptide is a degradative enzyme selected from the group consisting of acetylcholinesterase, extracellular superoxide dismutase, thrombin, and tissue plasminogen activator.

11. The fusion protein of claim 1, wherein the second polypeptide is a lipoliytic enzyme selected from the group consisting of cholesterol esterase, triglyceride lipases, lipoprotein lipase apolipoprotein B (apoB) and apoprotein E (apoE).

12. The fusion protein of claim 1, wherein the second polypeptide is a cell adhesion molecule selected from the group consisting of neural cell adhesion molecule (N-CAM) and platelet endothelium cell adhesion molecule (PECAM).

13. The fusion protein of claim 1, wherein the second polypeptide is a nuclear protein selected from the group consisting of c-fos, c-jun, RNA polymerases, and DNA polymerases.

14. The fusion protein of claim 1, wherein the second polypeptide is a microbial pathogen selected from the group consisting of glycoprotein C (gC) of herpes simplex virus I, glycoprotein B (gB) of herpes simplex virus II, glycoprotein C (gC) of herpes simplex virus II, glycoprotein B (gB) of herpes simplex virus II, glycoprotein C II (gC-II) of cytomegato virus, glycoprotein 120 (gp-120) of human immunodeficiency virus, circumsporozoite protein of Plasmodium falciparum, adhesion protein of Trypanosoma gondii, adhesion protein of Bordetella pertussis, adhesion protein of Streptococcus pyogenes and adhesion protein of Staphylococcus aureous.

15. The fusion protein of claim 1, wherein the heparan sulfate chain and modifies the function of the second polypeptide by influencing at least one of the binding affinity, binding specificity, and stability of the second polypeptide.

16. The fusion protein of claim 1, wherein the first polypeptide portion comprises amino acids 20-41 of SEQ ID NO: 9.